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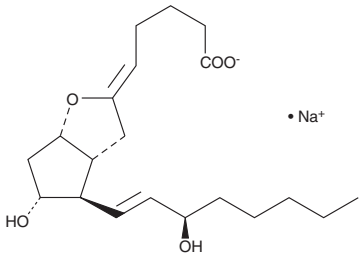
PRODUCT INFORMATION

15(R)-Prostaglandin I_2 (sodium salt)

Item No. 21586

Formal Name: (5Z,9α,11α,13E,15R)-6,9-epoxy-11,15-dihydroxy-prosta-5,13-dien-1-oic acid, monosodium salt
Synonym: 15(R)-PGI_2
MF: $C_{20}H_{31}O_5$ • Na
FW: 374.5
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

15(R)-Prostaglandin I_2 (15(R)-PGI_2) (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the 15(R)-PGI_2 (sodium salt) in the solvent of choice. 15(R)-PGI_2 (sodium salt) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of 15(R)-PGI_2 (sodium salt) in these solvents is approximately 5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 15(R)-PGI_2 (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 15(R)-PGI_2 (sodium salt) in PBS, pH 9.0, is approximately 11 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

15(R)-PGI_2 is an isomer of the natural 15(S) prostanoid, PGI_2 (Item No. 18220). PGI_2 is an unstable cyclooxygenase metabolite detected first in vascular endothelial cells.[1-3] It elevates platelet cAMP and is a potent vasodilator and inhibitor of human platelet aggregation with an IC_{50} value of 5 nM.[4] While the physiological properties of 15(R)-PGI_2 are not well known, 15(R) isomers of PGs typically have reduced receptor agonist activity compared to their 15(S) forms.

References

1. Moncada, S., Gryglewski, R., Bunting, S., *et al*. An enzyme isolated from arteries transforms prostaglandin endoperoxides to an unstable substance that inhibits platelet aggregation. *Nature* **263**, 663-665 (1976).
2. Johnson, R.A., Morton, D.R., Kinner, J.H., *et al*. The chemical structure of prostaglandin X (prostacyclin). *Prostaglandins* **12**, 915-928 (1976).
3. Stehle, R.G. Physical chemistry, stability, and handling of prostaglandins E_2, $F_{2\alpha}$, D_2 and I_2: A critical summary. *Methods Enzymol.* **86**, 436-459 (1982).
4. Aristoff, P.A., Johnson, P.D., and Harrison, A.W. Synthesis of 9-substituted carbacyclin analogues. *J. Org. Chem.* **48**, 5341-5348 (1983).

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